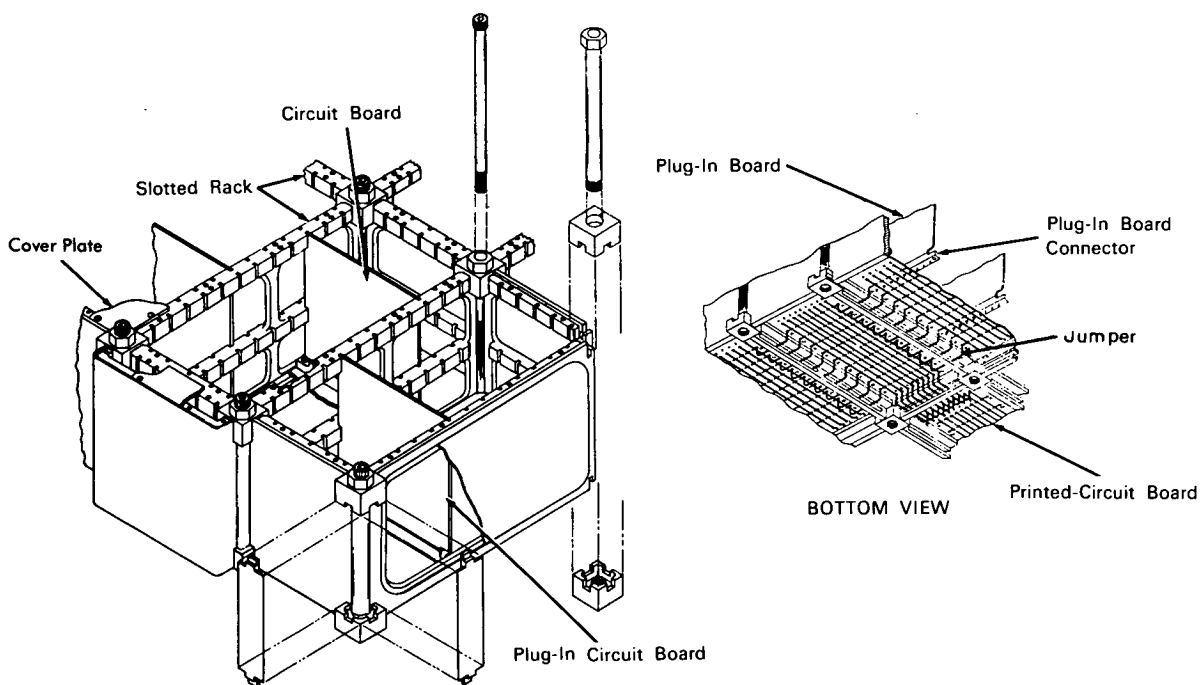


# NASA TECH BRIEF



This NASA Tech Brief is issued by the Technology Utilization Division to acquaint industry with the technical content of an innovation derived from the NASA space program.

## Modular Chassis Simplifies Packaging and Interconnecting of Circuit Boards



**The problem:** To design a completely modular arrangement for mounting a number of printed circuit boards. Provisions should be made for increasing or decreasing the size of the system without the use of cables, special fittings, castings, or special parts; yet without sacrifice of structural rigidity. Individual circuit boards should be easily removed and replaced to facilitate servicing.

**The solution:** A system of modular chassis structures.

**How it's done:** As shown in the isometric drawing of two sections of a chassis configuration, slotted rack

members make up the sides and ends of a boxlike structure. Each of the racks is provided with an interlocking joint, which is reinforced by corner blocks providing structural rigidity for the assembly. The two blocks at each corner of the box are drawn up tight by an assembly bolt which is threaded to mate with the lower block. The printed-circuit plug-in boards are slipped into the slots in the racks and interconnected by short jumper wires between fixed terminals on the printed circuit boards and connectors. Jumpers are used to interconnect one modular chassis to another. A plate covers the top of each module after the circuit boards have been assembled in the racks.

(continued overleaf)

**Notes:**

1. Two lengths of racks are provided to permit the assembly of a chassis with either a square or a rectangular configuration.
2. The input and output leads can be positioned in any number of available places.
3. The modular design is structurally adaptable to most applications, including computers and industrial control systems, where plug-in boards are employed.

4. For further information about this innovation inquiries may be directed to:  
Technology Utilization Officer  
Jet Propulsion Laboratory  
4800 Oak Grove Drive  
Pasadena, California 91103  
Reference: B63-10174

**Patent status:** NASA encourages commercial use of this innovation. No patent action is contemplated.

Source: Wayne E. Arens and Kenneth G. Boline  
(JPL-236A)